

REMARKS

Claims remaining in the present patent application are numbered 1-36. Claims 1, 10, 20, and 30 have been amended. The rejections and comments of the Examiner set forth in the Office Action dated May 19, 2005 have been carefully considered by the Applicants. Applicants respectfully request the Examiner to consider and allow the remaining claims.

35 U.S.C. §103 Rejection

The present Office Action rejected Claims 1-19 under 35 U.S.C. 103(a) as being unpatentable over Ezuriko (U.S. Publication No. 2002/0022470 A1) in view of Usui (U.S. Patent Publication No. 2004/0132516). In addition, Claims 20-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ezuriko in view of Usui and further in view of Mukerjee et al. (U.S. Patent No. 5,479,484). Applicants have reviewed the above cited references and respectfully submit that the present invention as recited in Claims 1-36, is neither anticipated nor rendered obvious by the Ezuriko reference taken alone or in combination with the Usui and Mukerjee et al. references.

Independent Claim 1

Regarding independent Claims 1, embodiments of the presently claimed invention disclose a system for wireless connectivity in a mobile environment as recited, in part:

a router for routing communication signals substantially complying with an Internet Protocol (IP) wireless standard to and from a wireless network, wherein said router is located on an object;

a first antenna located on said object communicatively coupled to said router for transmitting said communication signals to and from a plurality of access points on said wireless network and located outside of said moving object;

a second antenna communicatively coupled to said router for transmitting said communication signals to and from said plurality of access points, wherein said second antenna is positioned a distance from said first antenna on said object that allows said router continuous access to said

wireless network as said first antenna and said second antenna roam through said wireless network when switching between access points providing contiguous coverage while said object is moving. (Emphasis Added)

The claimed embodiment of Claim 1 pertains to a system for hitless wireless roaming in a mobile environment. The present invention as claimed includes a router that routes communication signals originating from a device located on the object. More particularly, independent Claim 1 includes a first antenna and a second antenna that allows the router continuous access to a wireless network by switching between access points that provide contiguous coverage in the wireless network while the object is moving.

Applicants respectfully note that the Ezuriko reference does not teach nor suggest the present invention as claimed in which hitless wireless roaming is provided in a moving object by switching between access points providing contiguous coverage in a wireless network by using a first and a second antenna located on the moving object. In contrast, the Ezuriko reference discloses a system in which communication to a single base station of a wireless network is established while a portable telephone is moving from a carriage (e.g., train) where use of the telephone is restricted to a carriage where use of the portable telephone is not restricted.

Specifically, the Ezuriko reference discloses establishing communication with a wireless network through a single base station 55 of Figure 6, in which a portable telephone 54 moves from a carriage 56 restricting telephone use to a carriage 58 in which the portable telephone can be used. That is, the Ezuriko reference addresses establishing communication with a wireless network as a portable telephone is moving from a carriage restricting communication to a carriage allowing communication with the portable device. Further, the Ezuriko reference provides specific examples in paragraphs

233 and 234 in which a channel connection establishment circuit 150 is able to provide handover services so that the base station can issue a path switching command to a network switching circuit so that communication between the base station and the portable telephone is established. As such, the Ezuriko reference discloses the restriction, or disconnecting, of communication with a single base station, and subsequent establishment of communication with the single base station as a portable telephone moves from a carriage limiting use of the phone to a carriage allowing use of the phone.

On the other hand, embodiments of the present invention as recited in independent Claim 1 disclose communication for a router on a moving object that is routing communication signals to and from a wireless network while switching between access points that are located outside of the moving object that provide contiguous coverage in the wireless network. That is, through the use of a first antenna and a second antenna on the moving object, embodiments of the present invention as recited in independent Claim 1 is able to allow the router to have continuous access to the wireless network. As such, embodiments of the present invention provide for continuous access to a wireless network as a moving object moves between access points, which is significantly distinct from the Ezuriko reference that discloses a restriction of access to a wireless network, and the subsequent establishment of access to the wireless network.

In addition, the Usui reference fails to overcome the shortcomings of the Ezuriko reference. Specifically, the Usui reference discloses a mobile telephone system that is capable of effectively utilizing GPS information even if direct reception by a mobile telephone apparatus is difficult. That is, the Usui reference enables the mobile telephone apparatus to use the position information of the mobile telephone base station instead of the position data of the mobile telephone apparatus. As such, the Usui reference does not disclose the capability of a router to have continuous access to a wireless network as a

moving object containing the router moves between access points in the wireless network.

Thus, Applicants respectfully submit that the Ezuriko reference taken alone or in combination with the Usui reference does not show nor suggest the method of the present invention as recited in independent Claim 1. Accordingly, Applicants respectfully submit that independent Claim 1 overcomes the cited reference, and as such Claims 2-9 which depend on independent Claim 1 are also in a condition for allowance as being dependent on an allowable base claim.

Independent Claims 10, 20, and 30

Regarding independent Claims 10, 20, and 30 embodiments of the presently claimed invention disclose methods and systems for wireless connectivity in a mobile environment as recited, in part:

transmitting communication signals substantially complying with an Internet Protocol (IP) wireless standard through a first antenna located on an object to a first access point in a wireless network while said object is moving along a path that is bringing said object into a second coverage zone provided by a second access point from a first coverage zone provided by said first access point, wherein said first access point and said second access point are located outside of said object;

establishing a link that communicatively couples said first antenna and said second access point using a Mobile IP standard as said object moves into said second coverage zone; and

transmitting said communication signals through a second antenna located on said object to said first access point while said first antenna is establishing said link with said second access point to provide continuous access to said wireless network. (Emphasis Added)

The claimed embodiment of Claim 1 pertains to a system for hitless wireless roaming in a mobile environment. The present invention as claimed discloses the transmission of communication signals from an object while the object is moving

between a first coverage zone and a second coverage zone serviced by a wireless network. More particularly, independent Claims 10, 20, and 30 provide for continuous access to the wireless network by effectively sending communication signals from a second antenna on the object to a first access point located outside of the object, while a first antenna on the object is establishing a link to a second access point located outside of the object on the wireless network.

For analogous reasons set forth in the argument related to independent Claim 1, Applicants respectfully note that the Ezuriko reference does not teach nor suggest the present invention as claimed in which hitless wireless roaming is provided in a moving object moving between coverage zones by switching between access points located outside of the object providing first and second coverage zones in a wireless network by using a first and a second antenna located on the moving object. In contrast, the Ezuriko reference discloses a system in which communication to a single base station of a wireless network is established while a portable telephone is moving from a carriage (e.g., train) where use of the telephone is restricted to a carriage where use of the portable telephone is not restricted. That is, the Ezuriko reference describes the disestablishing and establishing of communication with a single base station and does not disclose the continuous access for communication to a wireless network while an object is moving between a first coverage zone serviced by a first access point and a second coverage zone serviced by a second access point, wherein the access points are located outside of the object, as is recited in independent Claims 10, 20 and 30.

Moreover, the Usui reference fails to overcome the shortcomings of the Ezuriko reference. Namely, the Usui reference discloses a mobile telephone system that is capable of effectively utilizing GPS information even if direct reception by a mobile telephone apparatus is difficult. That is, the Usui reference enables the mobile telephone

apparatus to use the position information of the mobile telephone base station instead of the position data of the mobile telephone apparatus. As such, the Usui reference also fails to disclose the continuous access for communication to a wireless network while an object is moving between coverage zones by switching between access points located outside of the object providing first and second coverage zones in a single wireless network by using a first and a second antenna located on the moving object, as is recited in independent Claims 10, 20, and 30.

Furthermore the Mukerjee et al. reference fails to overcome the shortcomings of the Ezuriko and the Usui references. Specifically, the Mukerjee et al. reference discloses a method and apparatus for facilitating the making of wireless telephone calls. However, the Mukerjee et al. reference does not disclose providing continuous access for communication to a wireless network while an object is moving between coverage zones by switching between access points located outside of the object providing first and second coverage zones in a wireless network by using a first and a second antenna located on the moving object.

Thus, Applicants respectfully submit that the Ezuriko reference in combination with the Usui and Mukerjee et al. references do not show nor suggest the methods and systems of the present invention as recited in independent Claims 10, 20, and 30.

Accordingly, Applicants respectfully submit that independent Claim 10 overcomes the Examiner's basis for rejection, and as such Claims 11-19 which depend on independent Claim 10 are also in a condition for allowance as being dependent on an allowable base claim. Also, Applicants respectfully submit that independent Claim 20 overcomes the Examiner's basis for rejection, and as such Claims 21-29 which depend on independent Claim 20 are also in a condition for allowance as being dependent on an allowable base claim. Further, Applicants respectfully submit that independent Claim 30 overcomes the

Examiner's basis for rejection, and as such Claims 31-36 which depend on independent Claim 30 are also in a condition for allowance as being dependent on an allowable base claim.

CONCLUSION

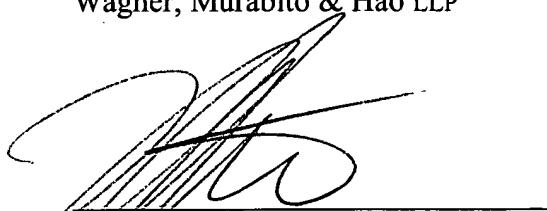
In light of the amendments and arguments presented herein, Applicants respectfully request reconsideration of the rejected Claims for allowance thereof.

Based on the arguments presented above, Applicants respectfully assert that Claims 1-36 overcome the rejections of record. Therefore, Applicants respectfully solicit allowance of these Claims.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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